

REMARKS

The February 28, 2008 Office Action regarding the above-identified application has been carefully considered; and the claim amendments above together with the remarks that follow are presented in a bona fide effort to respond thereto and address all issues raised in that Action. For reasons discussed below, it is believed that this case is in condition for allowance. Prompt favorable reconsideration of this amended application is requested.

The Office Action included an objection to claims 8 and 14 on minor formality grounds, and suggested several changes. Applicants have revised the preamble of claim 8 to recite “A computer program product,” as suggested by the Examiner. In claim 14, the hyphen has been deleted, as the Examiner suggested. Hence, the amendments to the claims should address these formality issues and remove any claim informalities. Withdrawal of the objection is respectfully requested.

A colon (:) has been added after the “wherein” in the preamble of claim 1, which may improve the grammar of that claim a bit. Applicants have also made a minor amendment to the paragraphs regarding step (4) in claims 1 and 8, so that the claims consistently refer to “the request for certificate validation” (instead of “the request for certificationion validation”). These revisions should not alter claim scope.

It appears that the discussion of claims 3 and 4 (page 5) in the February 28, 2008 Office Action includes some incorrect recitations regarding the language of claim 3. The discussion refers to step 11 and the phrase “the public key certificatedd issued” and to step 12 and the phrase “the validation key certificate in step 11.” However, the relevant portions of claim 3 as pending at the time of the rejection (and as presented above) actually recite “the public key certificate issued” and “the validation in step 11.”

Claims 1-14 were rejected under 35 U.S.C. §102(b) as anticipated by newly applied U.S. Publication No. 2002/0046340 to Fujishiro et al. (hereinafter Fujishiro). This rejection is traversed. It is respectfully submitted that Fujishiro does not satisfy all of the requirements recited in either claim 1 or claim 8, therefore all of the pending claims are novel over Fujishiro.

As discussed for example in the abstract, Fujishiro discloses a technique for periodically searching for and verifying paths which extend from a bridge certification authority to individual terminal admitting certification authorities. Fujishiro registers the paths whose verifications have held good, in a path database in association with the respective terminal admitting certification authorities. When there is a request for the authentication of the validity of a certificate, Fujishiro judges the subject certificate to be valid only when both the paths are registered. Sections of the Fujishiro publication cited in the rejection are consistent with the description in the abstract, that is to say, Fujishiro judges the subject certificate to be valid only when both the paths are registered.

The independent claims however include steps for registering a partial path in the event that the path specified by the certification validation request is NOT registered in the database. In particular, each independent claim includes *inter alia* recitations as follow:

step 6) if the checked path is not registered in the database as the valid path in step 4, searching a path that includes a partial path from the start certificate authority being the trust anchor to the end entity certificate issuing authority which has issued the public key certificate of which certificate validation is requested and which is the end of the path, and that extends from the start certificate authority being the trust anchor to the end entity which is an issue destination of the public key certificate of which certificate validation is requested;

step 7) in the searching step in step 6, if the path extending from the start certificate authority being the trust anchor to the end entity being the issue destination of the public key certificate of which certificate validation is requested is detected, validating the path that includes the partial path and extends from the start certificate authority being the trust anchor to the end entity being the issue

destination of the public key certificate of which certificate validation is requested;

step 8) judging the validity of the public key certificate of which certificate validation is requested based on the validation result in step 7 and outputting a result of the judgment; and

step 9) registering the partial path included in the path validated in step 7 into the database as a valid path.

It is respectfully submitted that Fujishiro does not in fact provide these steps relating to partial path validation for a situation in which a checked path is **not** registered in the database as a valid path.

The verification authority VA disclosed by Fujishiro performs a step of searching for a path first, verifying a searched path, and registering a verified path (validated path) in the database. If a request for a validity validation of a public key certificate is issued from an end entity terminal, the verification authority VA searches the database to determine whether or not a path corresponding to the requested validity validation is registered in the database. Then, using the search result, the verification authority VA confirms validity of the requested public key certificate (in the event that the path is registered as valid in the database). According to Fujishiro, if the path corresponding to the validity validation request of the public key certificate from the end entity terminal is **NOT** registered in the path database, the certificate that is the subject of the validity validation request is determined to be invalid. For example, in FIG. 10, if the processing in step S2002 determines that the path(s) are not in the database, then processing branches ("No" is selected) to step S2003 in FIG. 11 in which the requestor is notified that the subject certificate is not valid (see also paragraphs 0102 and 0103).

The Fujishiro methodology is prevalent, on the assumption that a configuration of a certification authority (and thus path configuration) would not change too often. It has been commonly considered, even if the configuration is changed by addition or deletion of

certification authorities, existing valid paths could be confirmed, once processes such as searching, verifying and registering of paths are implemented periodically (e.g. on a daily basis) or implemented manually by an administrator of a certificate validity authentication center (see e.g. paragraphs 0074 and 0075 of Fujishiro).

However, along with the growth of public key infrastructure or PKI, changes in the number of certification authorities and resulting changes in a configuration of a certification authority have arisen more often than expected. Thus, it has become increasingly difficult to confirm the existing valid paths by periodic searching, verifying and registering of a path. Under such rapidly changing circumstances, because information of change in configuration of a certification authority due to addition/deletion of certification authorities is not reported to the administrator promptly, processes such as manual searching, verifying and registering of a path could not be conducted properly. As a result, information in the path database is out of date, and a certificate validity authentication center may fail to respond with a correct detection result. For example, in a case where a path did not exist during the most recent periodic path search, but the path now exists anew at the time of reception of the request for certificate validity authentication, the new path is not in the database, therefore the verification authority will judge what would otherwise be a valid public-key certificate to be invalid (attention is directed to the discussion of Fujishiro in Applicants' own specification from line 6 on page 7 to line 5 on page 8).

In order to avoid disadvantages due to such reliance on periodic searching or administrative path updates, the method of claim 1 and the program product of claim 8 recite advantageous features in which, in addition to the conventional path searching, verifying and registering processes, a validity of public key certificate can be accurately confirmed, even if a valid path for a validity validation process is not yet registered in the database at the time of the request. These effective features significantly improve certification authority operation in a PKI

system, particularly where the system may be subject to frequent certification authority configuration changes.

As noted above, claims 1 and 8 both recite steps 6-8 as a process effective at the time when “the detected path is not registered in the database as a valid path.” Fujishiro is silent on such process steps in the event that the detected path is not registered in the database as a valid path. Thus, Applicants submit that the rejection over Fujishiro should be withdrawn.

According to the processing recited in step 9 of either claim 1 or claim 8, a path that is not registered in the database could be detected by search, then checked as to its validity and registered in the database. In this processing, the detected path is not “a path from a start certificate authority to an end entity,” but a partial path from a start certificate authority to an end entity certificate issuing authority as recited in step 6 of the independent claims (see also step S2016 in Applicants’ FIG. 11 and discussion of FIG. 11 starting on line 16 of application page 40). Such a configuration is not disclosed or suggested by Fujishiro, thus the registering of the partial path from a start certificate authority to an end entity certificate issuing authority in step 9 of either claim 1 or claim 8 provides a distinction over Fujishiro.

For example with the processing of step 6, even if an end entity certificate issuing authority as an end point of a partial path included in a path newly detected in step 6 issues a public key certificate to another end entity, a general partial path could be registered in the database in order to allow utilization of path information which is detected and confirmed as valid. According to this configuration, even if the end entity certificate issuing authority is requested, a verification of a public key certificate is issued for the other end entity, the process disclosed in step 4 then could be conducted by using the partial path information which is newly detected and registered. As a result, the distinguishing features of steps 6-9 enable the validity of a public key certificate to be verified precisely and promptly.

In view of the above noted distinctions of the independent claims over Fujishiro, it is submitted that the present claims are novel and unobvious over Fujishiro. Hence, the rejection over Fujishiro is improper and should be withdrawn.

Upon entry of the above claim amendments, claims 1-14 remain active in this application, all of which should be in condition for allowance. Accordingly, this case should now be ready to pass to issue; and Applicants respectfully request a prompt favorable reconsideration of this matter.

It is believed that this response addresses all issues raised in the February 28, 2008 Office Action. However, if any further issue should arise that may be addressed in an interview or by an Examiner's amendment, it is requested that the Examiner telephone Applicants' representative at the number shown below.

To the extent necessary, if any, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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